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October 19, 2001

27-19071.001

BROWN AND CALDWELL
Environmental Engineering & Consulting

Mr. Donald Webster
USEPA Region IV
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

RE: Grenada Manufacturing Facility
Grenada, Mississippi
USEPA ID No.: MSD 007 037 278

Dear Mr. Webster:

Attached for your review are responses to comments from the USEPA and MDEQ on the RCRA Facility Investigation Report for the referenced site. In addition, I have attached three copies of the related report pages that have been revised in response to those comments. Finally, we have included a compact disk containing a copy of the RFI Report in Adobe Acrobat format in a .pdf file. The entire RFI Report is included on the disk with the exception of Appendices C, D, and E, which consist of laboratory reports.

If you have any questions or comments, please feel free to contact me at (615) 250-1241 or by e-mail at dshowers@brwncald.com.

Sincerely,

BROWN AND CALDWELL

Dale R. Showers, P.E.
Project Manager
Design & Solid Waste

cc: Louis Crawford, MDEQ
John Bozick, Arvin Meritor
Don Williams, Grenada Mfg.
Dave McCabe, Textron

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Docket Number 450918

RESPONSES TO JUNE 19, 2001 USEPA COMMENTS ON THE RCRA FACILITY INVESTIGATION (RFI) REPORT GRENADA MANUFACTURING SITE GRENADA, MISSISSIPPI

INTRODUCTION

The following represents the responses to USEPA comments on the draft *RCRA Facility Investigation Report for the Grenada Manufacturing Facility in Grenada, Mississippi.* The RFI Report was originally transmitted to the USEPA and Mississippi Department of Environmental Quality (MDEQ) on July 25, 1999 as the Summary of Investigative Work (SOIW). The Agencies provided comments on the SOIW in a letter dated April 11, 2000. A revised SOIW (retitled the RFI Report) was then distributed on January 31, 2001. The USEPA transmitted additional comments on the RFI Report in a letter dated June 12, 2001. Those comments have been repeated below in italics followed by the response. Attached to these responses are copies of appropriate change pages for replacement into the RFI Report.

COMMENTS/RESPONSES

General Comment: After addressing the enclosed comments, please furnish final title pages and replacement pages for all outstanding volumes. Also, please furnish an electronic copy of the document on compact disc.

As requested, appropriate replacement pages are attached to this response document. In addition to the specific pages discussed in responses below, a revised window cover page, title page, and page 3-1 (with the "Draft" designation removed) have been provided as replacements for the draft report. Three copies of each replacement page have been provided so that the agency can update the three report copies transmitted in January 2001. This response document should be added to Attachment B to the RFI Report. Lastly, a compact disc containing a copy of the entire RFI Report is enclosed. The report has been provided in Adobe Acrobat format in a .pdf file.

OK

1. ***The Reference to Figure 4 on page 2-2 is incorrect. The reference should cite a figure which depicts the Geoprobe locations.***

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OK

2. ***Please add a summary of soils data for SWMU 12, page 1. In EPA's opinion, this SWMU may need further investigation of soils for Chromium contamination.***

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(b) (5)

interim measures at SWMU 12 were not necessary. No revisions have been made to the RFI Report as a result of this comment.

3. ***Please add to the summary of SWMU 13 that, upon cessation of wastewater treatment operations at the plant, SWMU 13 may need to be closed as a HSWA regulated unit.***

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SWMU 15 includes the subsurface process sewer system for the manufacturing facility. Previous activities at the facility have considered air as a potentially impacted medium. During installation of a hydraulic press in December 1999, the construction of the press foundation presented an opportunity for the collection of soil and groundwater samples to assess conditions beneath the manufacturing building. The hydraulic press is located near the center of the manufacturing area in the general vicinity of a former degreaser and a former grindings pit, both of which represent potential source areas for volatile organic compounds (VOCs). During the installation of three soil borings, continuous soil cores were collected and screened using a photo ionization detector (PID). Based on this field screening, discrete soil samples were collected for laboratory analysis of VOCs. Soil samples were collected from shallow, intermediate and water table depth intervals.

The results of the soil sample screening indicated the presence of VOCs in the soil. However, analytical data indicate that the concentrations are relatively low (a maximum concentration of 7.9 mg/kg of trichloroethene (TCE) was detected). Groundwater data collected from a temporary monitoring well installed at one of the three soil boring locations also indicated the presence of VOCs in the groundwater. This area is shown to be within estimated groundwater plumes for both toluene and TCE. All of this data is consistent with data presented in the RFI Report.

In general, the concentrations of VOCs in the soil and groundwater beneath the manufacturing building do not appear to be sufficient to allow volatilization of the VOCs into the ambient air at concentrations that would be a concern to workers in the plant. In addition, there are other potential sources of VOCs to the ambient air. These sources would skew the results of any indoor air monitoring. Lastly, the facility has engineering controls (i.e., air handling units) that would minimize build-up of VOC concentrations in the ambient air. No revisions have been made to the RFI Report as a result of this comment.

(b) (5) [redacted]

(b) (5) [redacted]

(b) (5) [redacted]

(b) (5) [redacted]

(b) (5) [redacted]

RCRA FACILITY INVESTIGATION REPORT

prepared for

Grenada Manufacturing Facility
Grenada, Mississippi

January 2001

Revised October 2001

27-19071.001

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RCRA FACILITY INVESTIGATION REPORT
for the

GRENADA MANUFACTURING FACILITY
EPA ID NO. MSD 007037278
GRENADA, MISSISSIPPI
(This Document is the Revised Summary of
Investigative Work Submitted July 1999)

Prepared for:

Arvin Meritor, Inc.
Troy, Michigan

Prepared by:

BROWN AND CALDWELL
501 Great Circle Road
Nashville, Tennessee 37228
(615) 255-2288

January 2001

Revised October 2001

19071.001

During a meeting held at Grenada Manufacturing on April 25 and 26, 2000 the results of previous investigations and Interim Measures were discussed. The USEPA, MDEQ, Grenada Mfg., Arvin Meritor, and BC agreed that additional groundwater sampling would be performed to update the groundwater database and incorporate the updated information into the RFI Report (revised SOIW). Accordingly, a site-wide groundwater-sampling event was conducted in October 2000 to update the groundwater database. Twenty-five (25) monitoring wells were sampled and analyzed for VOCs, semi-volatile organic compounds (SVOCs), target analyte list (TAL) metals, and hexavalent chromium to assess current groundwater quality at the Site.

Concurrent with the October 2000 groundwater sampling event, additional groundwater sampling using direct-push technology was conducted to provide additional data. The objective of the direct-push groundwater sampling was to determine the lateral and vertical extent of the groundwater plume along Riverdale Creek. Seven direct-push sampling locations (shown on Figures 6 to 31) were used to meet data needs. Two groundwater samples for volatile organic compounds (VOCs) were collected from each location. One groundwater sample was collected from the upper ten feet of the water table aquifer and the second sample was collected from the lower portion of the aquifer. The sample locations were positioned strategically between the extent of the plumes as known prior to sampling and Riverdale Creek to assess the presence of constituents of concern.

2.1 LNAPL AND DNAPL RECOVERY

Additional data collected from AOC A and AOC B were limited to volumes of free phase liquids recovered, as shown in Figure 3 for DNAPL and Figure 4 for LNAPL. As a result of the Interim Remedial Actions performed in AOC A and AOC B, over 200 gallons of TCE and 2,000 gallons of toluene were removed before product thickness decreased to the point where additional recovery using automatic recovery systems was no longer beneficial. At that point, LNAPL and DNAPL recovery was performed periodically on a manual basis (i.e., using hand bailers). During the October 2000 sampling event, recoverable LNAPL was observed in monitoring well MW-24 (AOC B) and recoverable DNAPL was observed monitoring well MW-25 (AOC A). Additionally, recoverable DNAPL and LNAPL were

3.0 DATA SUMMARIES FOR SWMUS AND AOCS

Summaries of data included in the RI Report and collected subsequent to issuance of the RI Report are provided for SWMUs 7 and 12 (for which it has been determined that no further action is required at this time). Reasons why no further investigatory work is required at this time are also provided. In addition, summaries documenting media-specific concentrations were requested for SWMUs 13, 14, and 15 and AOCs A, B, and C. These summaries are provided herein and contain the location, a brief description of the media that have been investigated, and media-specific concentrations for constituents that were reported in the RI Report above their detection limit in a number of samples. Additionally, pertinent data for soils, groundwater, surface water, and/or sediments have been extracted from the data tables contained in Appendix D of the RI Report. USEPA was provided a copy of the oversized drawings with the RI Report. These maps were not submitted with the Draft SOIW and, therefore, are not included with this RFI Report. The oversized maps from the RI Report are included by reference only.

The summary data tables provided for SMWU 7, 12, 13, 14, 15, and AOC A, AOC B, and AOC C have been updated to include the appropriate action level criteria requested by USEPA and to include the groundwater data collected October 2000. Surface water, sediment, soil, and effluent data collection were not part of the approved Interim Measures Work Plan. Therefore, the data tables that present RI data for those media were revised only to include the appropriate action level criteria. The information presented in those tables is generally reflective of the conditions at the time of the RI and not current conditions, as is reflected by the groundwater data summary tables.

Summaries are provided in the following order:

- SWMU 7 Outfall Ditch
- SWMU 12 Wet Well
- SWMU 13 Wastewater Treatment Plant
- SWMU 14 Destruct Pit
- SWMU 15 Process Sewers

interim measures at SWMU 12 were not necessary. No revisions have been made to the RFI Report as a result of this comment.

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Sediments: Sediment samples were collected from three (3) locations along the Outfall Ditch as shown in over size drawing 5-45 of the RI Report.

Additional relevant data is presented in Table 2-7; 1997 effluent data for the Wastewater Treatment Plant. Furthermore, groundwater adjacent to the Outfall Ditch has been monitored and is summarized in Section 2 of this document and can be seen in Figures 5-46 through 5-63 of the RI Report.

Summary: The potential impact from the Wastewater Treatment Plant is evident from the sediment, surface water, and effluent data presented here and in Table SWMU 13, as well as the oversized drawings in the RI Report. Chromium, TCE, and 1,2-DCE are the primary constituents found in these media. Furthermore, the Wastewater Treatment Plant is located within the TCE plume and along the apparent downgradient edge of the Chromium (VI) plume. At such time that Grenada Manufacturing modifies its manufacturing operation such that treatment of process wastewater on site is no longer necessary, it will evaluate the need to operate the Wastewater Treatment Plant. If, at that time, Grenada Manufacturing determines that the treatment plant is no longer needed, closure of the various units in accordance with appropriate regulations will commence. This closure process will be considered in the plans for the treatment plant.

SWMU 14 DESTRUCT PIT
OR
CHROMIUM REDUCTION UNIT/HOLDING SUMP

SUMMARY

Location: Eastern portion of facility along the edge of the main building and south of the Equalization Lagoon.

Description: Concrete pit measuring 20 feet by 10 feet by 15 feet deep (10 feet below ground surface, 5 feet extending above ground).

Sulfur dioxide was used to convert hexavalent chromium to trivalent chromium.

From 1961 to 1977 discharged to process sewers to the Equalization Lagoon to the Outfall Ditch to Riverdale Creek.

From 1977 to 1990 discharged to Equalization Lagoon to Wet Well to Wastewater Treatment Plant.

From 1990 to 1993 discharged to Wet Well and then to Wastewater Treatment Plant.

From 1993 to Present used as holding sump for hexavalent chromium.

Investigation: Monitoring Well MW-23 is located approximately 25 feet from the Destruct Pit. Soil samples were collected at 0 to 0.5 feet, 2 to 4 feet, and 6 to 8 feet below ground surface.

Data are presented in the attached Table SWMU 14 and Figures 5-1 through 5-43 of the RI Report for soil, and Table SWMU 14 and Figures 5-46 through 5-63 of the RI Report for groundwater.

Summary: As seen in oversized drawings 5-46, 5-47, and 5-63 of the RI Report, the Destruct Pit is within groundwater plumes for VOCs and for hexavalent chromium. The chromium plume is largely due to chromium VI and appears to be of limited extent. Reducing conditions are evidenced by the presence of reductive dechlorination. Products of TCE may result in conversion of chromium (VI) to chromium (III) with subsequent precipitation. Additional investigation would not provide greater delineation that would further facilitate the anticipated Corrective Measure Study and thus, selection of a remedy for the site and this SWMU. Additional sampling might be conducted during the preliminary design phase or during construction of a remedial system, and afterwards, to monitor the effectiveness of the remedial system.

ATTACHMENT B

RESPONSE TO USEPA COMMENTS

RESPONSES TO JUNE 19, 2001 USEPA COMMENTS ON THE RCRA FACILITY INVESTIGATION (RFI) REPORT

GRENADA MANUFACTURING FACILITY
GRENADA, MISSISSIPPI

RESPONSES TO JUNE 19, 2001 USEPA COMMENTS ON THE RCRA FACILITY INVESTIGATION (RFI) REPORT GRENADA MANUFACTURING SITE GRENADA, MISSISSIPPI

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RESPONSES TO USEPA REGION IV COMMENTS ON THE SUMMARY OF INVESTIGATIVE WORK

GRENADA MANUFACTURING FACILITY
GRENADA, MISSISSIPPI

RESPONSES TO USEPA REGION IV COMMENTS ON THE SUMMARY OF INVESTIGATIVE WORK

GRENADA MANUFACTURING FACILITY GRENADA, MISSISSIPPI

In accordance with the United States Environmental Protection Agency (USEPA) Region IV letter to Grenada Manufacturing dated April 11, 2000, Grenada Manufacturing, LLC is required to respond to comments on the Summary of Investigative Work (SOIW) and to revise and resubmit the SOIW as the Draft RCRA Facility Investigation (RFI) Report. This document contains the responses to comments on the SOIW and is hereby included as Attachment B of the Draft RFI Report.

The comments (in bold text) are addressed in the order that they were received. A response to each of the comments is provided immediately following each of USEPA's comments. As appropriate, the RFI Report has been modified to reflect the following responses.

GENERAL

Comment 1. The SOIW documents that there is groundwater and soil contamination at several SWMUs and that the groundwater contamination is facility-wide. EPA would like to propose that the facility address groundwater contamination on a 'whole facility basis' in the future, rather than on a SWMU by SWMU basis. Source removal and soil contamination must still be addressed on a SWMU by SWMU basis for all SWMUs and AOCs listed on Table G.1 and G.3 in the facility's permit.

Arvin Meritor concurs with USEPA's suggestion that facility groundwater be addressed on a site-wide basis rather than on a SWMU by SWMU basis. A large portion of the site's groundwater is currently impacted by TCE and its degradation products. Additionally, there is a significant portion of the site where chromium impacts groundwater. However, based on data collected to date, it is difficult to differentiate sources and, therefore, groundwater is best addressed on a site-wide basis. This approach was discussed and agreed upon at the April 2000 meeting.

Comment 2. EPA would like the facility to begin corrective action as soon as possible at the highest priority SWMUs and AOCs requiring further action in the facility's HSWA permit and/or shown by the SOIW to require further action. To this end, EPA is requiring that an Interim Measures (IM) Workplan for SWMUs 12, 14, 15 and AOCs A and B be generated within 30 days of receipt of this letter. The IM Workplan should address source removal, closure of the Chromium Destruct Pit and facility-wide groundwater contamination.

A Draft Interim Measures Work Plan (IMWP) was submitted to USEPA and MDEQ on June 13, 2000. The Interim Measures Work Plan addresses priority SWMUs 14 and 15, AOCs A and B, and site-wide groundwater. It was agreed during an April 2000 meeting that SWMU 12 would be addressed indirectly through site-wide groundwater interim measures. The Draft Interim Measures Work Plan was approved with one exception, the proposed closure schedule for the Chromium Destruct Pit. USEPA believes that continued operation of the Chromium Destruct Pit, as is, acts as a source of chromium contamination to groundwater. To that end, Grenada Manufacturing is in the process of complying with the USEPA request. Grenada Manufacturing is securing the means to close the Chromium Destruct Pit within the designated time-table set by USEPA in its letter dated July 20, 2000. Chromium plating operations were discontinued January 19, 2001.

While not confirmed at the time of the SOIW, impact to Riverdale Creek due to discharge of groundwater containing TCE and its degradation products was identified as an environmental condition that may benefit from implementation of Interim Measures. To that end, additional data collection was proposed in the SOIW to better define the extent of TCE and its degradation products along Riverdale Creek. Based on review of the data collected as part of the Interim Measures Work Plan, TCE impacted groundwater at the Site is discharging to Riverdale Creek. Arvin Meritor is in the process of evaluating potentially applicable Interim Measures to address site-wide groundwater.

SPECIFIC

Comment 1. Concentrations of contaminants in Tables 2-1 through 2-7 and in Section 3.0, Data Summaries for SWMUs and AOCs, should list the appropriate maximum allowable exposure level for each contaminant, such as EPA Region 3 Risk-Based Concentrations

(RBCs) for soil and air; Office of Water, Maximum Contaminant Levels (MCLs) for ground and drinking water; and any appropriate surface water quality or sediment screening standards. Detected values should then be compared to the appropriate target cleanup levels in the same measurement units as the standard. For example, MCLs for groundwater are reported in mg/L and risk based concentrations for soil and sediment are reported in mg/kg. The SOIW reports organics in µg/L and metals variously as mg/L or µg/L. Please convert all measurements to a consistent standard format and resubmit revised pages for the final RFI report.

As requested and where applicable, each of the referenced tables have been revised to include the most appropriate media-specific action level. Furthermore, the tables have been revised to reflect consistent units for comparison to the action levels.

During the conduct of the Baseline Risk Assessment portion of the Remedial Investigation (ECKENFELDER, INC., January 1994), the risk-based action level process revealed that there were five media, encompassing 14 constituents, which should be evaluated during the remedy selection process:

- interim action area soil or on-site landfill (TCE);
- soil under pavement which represent both the former toluene and former trichlorethene storage areas (arsenic and TCE);
- downstream Riverdale Creek surface water (arsenic, pentachlorophenol, TCE, and vinyl chloride);
- restricted on-site surface water (TCE and vinyl chloride) which includes the sludge lagoon and outfall ditch west of Route 332; and
- groundwater from the uppermost aquifer (arsenic, benzene, bis (2-ethylhexyl)phthalate, chromium (VI), 4,4'-DDE, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene (total), tetrachloroethene, toluene, 1,1,2-trichloroethane, TCE, and vinyl chloride).

The results of the Baseline Risk Assessment performed during the Remedial Investigation demonstrated that potential risks from all site media, except for groundwater from the uppermost aquifer, are "low-level" risks. Although there are no known current human receptors, groundwater

potentially poses a high-level risk if it were used as a drinking water supply. Evaluation of the groundwater risk estimates (particularly ingestion) indicates that the higher risk estimates are primarily a function of the relatively high concentrations of the constituents TCE and 1,2-dichloroethene, and also a function of the associated toxicity of arsenic and vinyl chloride.

The various action levels determined for these constituents will be further evaluated, along with ARARs, during the remedy selection process. In addition to site-specific risk-based action levels calculated during the Remedial Investigation, other potentially applicable action levels include the Federal and State Surface Water Quality Criteria, the National Oceanic Atmospheric Association's Biological Effects Range Criteria for sediment, and USEPA's Region 9 Preliminary Remediation Goals.

The following criteria and corresponding media have been presented in the revised tables for comparison and further evaluation during the remedy selection process:

- Groundwater - Maximum Contaminant Levels (MCLs) and Site Specific Risk-Based action levels calculated by Brown and Caldwell and USEPA Region 9 Preliminary Remediation Goals
- Soil – Site Specific Risk-Based action levels calculated by Brown and Caldwell and USEPA Region 9 Preliminary Remediation Goals
- Sediment – Site-Specific Risk-Based action levels calculated by Brown and Caldwell National Oceanic Atmospheric Association screening levels
- Surface Water – Site-Specific Risk-Based action levels calculated by Brown and Caldwell Mississippi Water Quality Criteria and Federal Water Quality Criteria.

Comment 2. In order to make comparisons of corrective action effectiveness at various monitoring well locations, the facility should plot concentration versus time of key VOC and metal contamination constituents at each monitoring well. This will yield a graphic representation and show the effectiveness of remediation. This information should be included in future Groundwater Monitoring Reports.

To the extent possible, Section 2.0 of the revised SOIW includes a discussion of observed trichloroethene and chromium concentration trends. The current site analytical database is limited and does not support the development of meaningful concentration plots. However, Brown and Caldwell will continue to discuss trends and as more groundwater data is collected as part of implementation and monitoring of Interim Measures, concentration plots will be developed, as appropriate.

Comment 3. The overlay figure provided should have the locations of all monitoring and recovery wells indicated more clearly. On the overlay provided, it is difficult to see the detail of the entire facility. The LNAPL, DNAPL and Chromium plumes should be marked in color. Please show the direction of surface water flow and groundwater flow on the figure.

Figure 2 has been added and shows the requested information and detail.

SWMU SPECIFIC

Comment 1. SWMU 7 – Outfall Ditch: At this SWMU, the reported levels of Chromium in the surface water exceeded the National Recommended Water Quality Criteria. TCE exceeded the recommended levels for human consumption by an order of magnitude or more. Is a warning against human consumption posted at Riverdale Creek? However, sediment samples did not exceed RBCs for total Chromium and an ecological screening level for TCE in sediment has not been calculated. EPA is concerned about the continued release of TCE and Chromium in the effluent from the wastewater treatment facility, and will inquire at the MDEQ Water Branch what effect these exceedances of the National Recommended Water Standards may have on compliance with the facility's NPDES permit. EPA cannot grant No Further Action status for this SWMU at this time, but does not require this SWMU to be included in Interim Measures.

As discussed in the meeting with MDEQ, USEPA, Grenada Manufacturing, Arvin Meritor, and Brown and Caldwell on April 25, 2000, this issue is more appropriately addressed under the facility's operations and existing NPDES Permit. However, potential impacts to the ditch from groundwater will be considered during evaluation of Interim Measures and, eventually, final corrective measures.

Comment 2. Wet Well Sump: The reported TCE concentrations exceed both MCLs and Risk based Cleanup action levels in the groundwater, at monitoring well RT-2, closest to the Wet Well. Because of the lack of soil data at this SWMU, confirmatory soil samples must be taken. Soil samples should be taken at 2-foot intervals from ground surface to below this unit. Based on EPA's technical review of the SOIW, this SWMU cannot be granted No Further Action status. This SWMU must be included in the Interim Measures Workplan for remediation of groundwater contamination and possible source removal, pending the results of soil sampling.

As discussed in the meeting with MDEQ, USEPA, Grenada Manufacturing, Arvin Meritor, and Brown and Caldwell on April 25, 2000, this issue is being addressed indirectly through the site-wide groundwater Interim Measures. Based on our knowledge of the operations associated with the Wet Well, it is not likely that impacts to groundwater at that SWMU were a result of a release to soil. The bottom of the Wet Well is located approximately 13 ft below ground, which is below the groundwater table surface. Therefore, impacts to groundwater are believed to be part of the site-wide groundwater impacts. As agreed during the April 2000 meeting, impacts to groundwater at this location is likely due to impacts from other sources. Therefore, soil sampling at the Wet Well is not warranted and was not included in the Interim Measures Work Plan.

Comment 3. SWMU 14 – Chromium Destruct Pit: Reported groundwater levels of Chromium and TCE exceed MCLs. The SOIW does not indicate that any soil samples were taken below the unit. Soil samples should be taken at depths greater than 10 feet around and below this unit so that a judgement can be made regarding the extent of source removal. This SWMU must be included in the Interim Measures Workplan for remediation of groundwater contamination and removal of contaminated soils.

Grenada Manufacturing is in the process of complying with USEPA closure requirements for the Chromium Destruct Pit. Grenada Manufacturing is securing the means to close the Chromium Destruct Pit within the designated time-table set by USEPA in its letter dated July 20, 2000. Chromium plating operations were discontinued January 19, 2001. A Closure Plan will be prepared by Grenada Manufacturing and submitted by the March 20, 2001 date stipulated by the USEPA.

Comment 4. Chromium Destruct Pit and SWMU 15 – Process Sewers: These SWMUs have released listed hazardous wastes (F006) and hazardous constituents (TCE, DCE, Cr, As) to the groundwater and soil. Both the Chromium Destruct Pit, and the Process Sewers have been in use since 1961. Both units have a history of systematic and continuing releases of listed wastes subject to the Land Disposal Restrictions of RCRA and could be considered to be Regulated Units, if so desired by the MDEQ. They must be closed under appropriate closure requirements in Part 264 Subparts J through L. The Interim Measures Plan for these units must include provisions for alternatives to these units, temporary closure of these units, and investigation into the extent of source removal necessary to eliminate releases from these units.

As discussed in the meeting with MDEQ, USEPA, Grenada Manufacturing, Arvin Meritor, and Brown and Caldwell on April 25, 2000, this issue is being addressed indirectly through the site-wide groundwater Interim Measures. Please also refer to the responses to SWMU Specific Comment No. 3 above.

Comment 5. Process Sewers: The SOIW confirms the presence of TCE and Chromium in the groundwater at this SWMU. The Process Sewers provide a pathway for release of groundwater contaminants into the ambient air of the Main Plant Building. Because the process sewers under the Main Plant Building are contaminated from past activities, any cleanup plan should consider the utility of soil vapor extraction of groundwater and soil contaminants or some similar technology for long term cleanup of the air and groundwater. SWMU 15 must be included in the Interim Measures Workplan for remediation of groundwater contamination and possible remediation of air.

As indicated in Section 3.1 (Source Control Measures) of the approved Interim Measures Work Plan, SWMUs 14 (Process Sewers) and 15 (Chromium Destruct Pit), including potential air emissions from these areas of the plant, will be addressed during further evaluation of Interim Measures. As noted in the approved Interim Measures Work Plan, it is doubtful that additional air monitoring will be necessary since recent air monitoring data obtained from the area during plant expansion activities is below levels of concern. This will include evaluation of potentially applicable

source control measures, which would be incorporated into and implemented as part of an overall or long-term change to be decided by Grenada Manufacturing, LLC.

Comment 6. SWMU 15 – Process Sewers: The sewer line that runs from the Destruct Pit to the Wet Well has been closed. EPA recommends that all portions of the process sewers no longer in use be filled with concrete to prevent their inadvertent or accidental use. EPA recommends that all hazardous waste containing materials piped in the plant be piped above ground so that piping can be easily inspected. As part of Interim Measures, the Process Sewers still in operation carrying hazardous waste or hazardous constituents must be integrity tested and repaired as soon as practicable if a release is found. EPA considers the process sewers to be a potential source of continuing releases.

Please refer to the comment response for USEPA Comment No. 5.

Comment 7. EPA requires that as part of Interim Measures Workplan, indoor air be tested for VOCs, at a minimum; TCE, 1,2-DCE, Benzene, Ethylbenzene, Xylene, and Toluene, in areas of the main plant where the Process Sewers are still operational. If levels of indoor air contaminants are found to be above Risk-based limits, EPA recommends that the facility take appropriate steps to immediately reduce air contamination, comply with OSHA regulations, and to inform employees. Air releases are considered SWMUs by EPA and are subject to HSWA Corrective Action. Indoor air testing must be included in the Interim Measures Workplan.

Please refer to the comment response for USEPA Comment No. 5.

Comment 8. AOC A – Former Trichloroethylene Storage Area: As reported in the SOIW, groundwater and soil contain high levels of PCE, TCE, 1,2-DCE exceeding MCLs. This contamination resulted from the release of 10,000 to 12,000 gallons of TCE in the early 1980s. About 570 gallons of TCE have been recovered from this release using recovery wells located in the vicinity of the release; however, interim remediation activities at this AOC, and AOC B have been suspended, as stated in the SOIW. It is EPA's opinion that corrective action to date has not been effective in recovering most of the DNAPL from the release.

High subsurface concentrations of these contaminants are known to exist downgradient of this AOC (Figure 5-47 in SOIW). Table 2-2 in the SOIW demonstrates that TCE concentrations in monitoring wells did not decrease substantially between 1993 and 1998. An Interim Measures Workplan must be developed to continue remediation of this release. Ultimately, a facility-wide groundwater corrective action program must be developed and implemented to effectively remediate the releases from this and all AOCs and SWMUs. If source removal of contaminated soils, restarting the recovery wells, drilling of new recovery wells or any measure would be effective in remediation of the TCE release; such an approach must be included in the Interim Measures Workplan. Whatever Interim Measures are selected must compliment the facility's final corrective action plan.

Currently, residual DNAPL and LNAPL are being recovered manually from AOC A and B, respectively, and it is anticipated that this activity will continue as long as NAPL recovery remains successful. As indicated in Section 2.2 (Ongoing Source Control Measures) of the approved Interim Measures Work Plan, further evaluation of the existing NAPL recovery system will be addressed as part of the Interim Measures Study.

Comment 9. AOC B – Former Underground Storage Area: As reported in the SOIW, Groundwater contains high levels of toluene, TCE, 1,2-DCE, ethylbenzene and xylene exceeding MCLs. Corrective action to date has been effective in recovering a significant amount of LNAPL from the release, however, known pockets of this contamination continue to exist (Figure 5-54 in SOIW). This AOC must be included in the Interim Measures Workplan and the facility-wide groundwater corrective action plan. The necessity of source removal of contaminated soils should be evaluated through confirmatory soil sampling before this AOC can be considered NFA.

Currently, residual DNAPL and LNAPL are being recovered manually from AOC A and B, respectively, and it is anticipated that this activity will continue as long as NAPL recovery remains successful. As indicated in Section 2.2 (Ongoing Source Control Measures) of the approved Interim Measures Work Plan, further evaluation of the existing NAPL recovery system will be addressed as part of the Interim Measures Study.

Comment 10. AOC C, The Fuel Tank Farm Containment Area and SWMU 13, the Wastewater Treatment Plant require no further action at this time. If future evidence of significant spills or systematic or continuing releases becomes available, this status may change.

USEPA's comment is duly noted. No additional response is necessary.